DOCUMENT RESUME

ED 299 893 HE 021 824

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TITLE Ten Years of Higher Education in Virginia. A Report to the State Council of Higher Education for Virginia.
INSTITUTION Virginia State Council of Higher Education, Richmond.
PUB DATE Jun 87
NOTE 28p.
AVAILABLE FROM State Council of Higher Education for Virginia, James Monroe Building, 101 North Fourteenth Street, Richmond, VA 23219.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Change Strategies; *Educational Change; Educational History; Educational Quality; Enrollment Trends; Government School Relationship; Higher Education; Operating Expenses; Program Development; Program Termination; *Public Colleges; Research Administration; *Resource Allocation; Salary Wage Differentials; State Aid; *Statewide Planning; Student Characteristics; Student Financial Aid; Teacher Salaries; Technology; Trend Analysis
IDENTIFIERS *Virginia

ABSTRACT

The 10-year report of Virginia's Director of the State Council for Higher Education gives an overview of trends and changes in the state's institutions during that period, examines strategies for the future of the state's higher education planning, and discusses the role of technology in knowledge development. It outlines the broad principles of planning and resource allocation adopted in Virginia, discusses the priority of specific curriculum and governance issues, and proposes general directions to be taken by the system in a number of administrative and academic areas. The section on technology examines the conflict between it and the liberal arts and proposes an approach to the college curriculum that accommodates both human values and the contributions of technology but requires a fundamental change in faculty attitudes and commitment. Contains 6 references. (MSE)

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TEN YEARS OF HIGHER EDUCATION IN VIRGINIA

A Report To
The State Council
Of Higher Education
For Virginia

ED299893

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HE 021 824

By Gordon K. Davies
Director

JUNE 1987

June 3, 1987

Mr. Chairman and Members of the Council of Higher Education:

Ten years ago, I was appointed Director of the State Council of Higher Education for Virginia. Since that time, I have directed staff activities and carried out the Council's responsibilities under your general policy guidance.

Having served for ten years, I present to you a report of the progress and achievements of Virginia higher education and of the Council of Higher Education. I think you will agree that these have been fruitful years.

But I review the past primarily as a prologue to reflections about the future of Virginia higher education. We have come a long way, yet much remains to be done.

While there has been considerable change over the years, the Council's basic themes have remained constant. We have maintained that Virginia higher education, while very good, can be better. Indeed, the very nature of the enterprise precludes it from ever being good enough. Quality improvement has been at the root of virtually every Council initiative. We have acted from the conviction that it is not necessarily better to be bigger. We have held that increased access to higher education is good, but that increased access to good higher education is better.

We have used the historically conservative character of Virginia government to help avoid the "fad-of-the-year" approach to education. On the other hand, we have tried to shake institutions and their supporters out of the occasional dogmatic slumbers that are a product of Virginia's rich history and traditions. We have tried to find the balance between respect for the past and responsibility for the future.

We have sought equity in the allocation of resources to the various colleges and universities. There is never enough money to do every good thing, so we often have had to choose which good things would not get done. We have recommended balanced funding across the system, and this is one reason why almost all of the colleges and universities are healthy today. We have made some mistakes, but not many.

In writing this report, I have become aware of a strong ambivalence in my attitude toward change. On the one hand, I know that it has occurred, and think that I have learned at least something about how to cause it. We can motivate persons and institutions to change, manage it, and to some extent control its outcomes.

On the other hand, I am at times almost overwhelmed by the forces that militate against change. The prevailing orthodoxies of our society and our institutions of higher education permit the appearance of change, but resist change itself. The social institutions to which we belong determine to a large extent what we can know and do. Rather than submit to change, they will attempt always to make us conform to them.

Change can be forced externally, but with the risks that social institutions will be destroyed rather than changed or that they will resist passively and resume their original shapes after the pressure subsides. This is why social policies like affirmative action take so long to implement and encounter such resistance when they are imposed as compliance issues. The best if not the only way for change to occur is from within an institution, based upon its members' determination that it is necessary.

I choose to proceed on the assumption that we can create the conditions necessary for substantive change in Virginia higher education. To choose otherwise is to succumb to despair. We have too much fun, and get too much done, to despair. But we do well to remember that inertia, complacency and fear will impede any change that threatens the comfortable way things have been done.

Virginia's system of higher education operates with strategic goals but without a detailed plan. I think this way of operating is appropriate here at this time and probably is more appropriate than generally is recognized for public systems everywhere. The nature of political processes makes agreement about details extremely costly. Basic goals are compromised and support is lost as a result of head-on confrontations that force different interest groups to take sides.

An organization like the Council, with primarily coordinating and advisory powers, but with responsibilities that invariably limit institutional aspirations, cannot afford the deep divisions among constituencies that detailed plans would occasion. Keeping its strategic goals in mind, the Council should continue to seek support and tactical leverage where it can find them and take advantage of whatever opportunities develop to keep the system moving generally in the direction it perceives to be right. As a colleague of mine from another state put it, "Our job is the management of change by rapid improvisation."

Virginia's good system of higher education can become better, but the changes needed will not happen by themselves. Institutions, for several understandable reasons, will not initiate many of the changes. Their administrators are too busy trying to meet the daily operating pressures to which they are subjected. Their faculties are too busy with teaching, research and scholarship, and public service. The Council of Higher Education is at a point in its life when it should become a more aggressive promoter of change. It ought not seek more control, but neither can it be content with business as usual. It should pursue its agenda as vigorously as possible.

The ideas presented here are my own, not yours in any way. But they are, I think, generally compatible with the direction I have been given by you and your predecessors over the years. They also draw heavily upon the accumulated knowledge and experience of friends and colleagues on the Council's excellent staff, although the judgments are mine and not theirs.

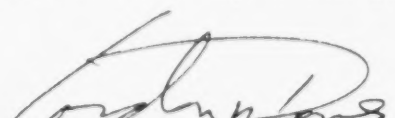
You have been kind enough to let me learn as we went along. Occasionally you even appeared a bit amused by some mess or other that I made. Through it all, you and your predecessors have provided good advice, direction, and, most of all, strong support.

When the Virginia Plan for Higher Education *was published in 1973, I proposed to begin it with an epigram from* Alice in Wonderland. *Being unsuccessful then, I have waited all these years and do it now.*

> "Would you tell me please, which way I ought to walk from here?"
>
> "That depends a great deal on where you want to get to," said the Cat.
>
> "I don't much care where—" said Alice.
>
> "Then it doesn't matter which way you walk," said the Cat.
>
> "—as long as I get somewhere," Alice added as an explanation.
>
> "Oh, you're sure to do that," said the Cat, "if you only walk far enough."

We ought to walk into the next century with some idea of where we want to go.

I thank you, your predecessors, and the many good people with whom I work. I hope these thoughts and perspectives are useful.



Gordon K. Davies

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"What's Past is Prologue"

In 1973, the State Council of Higher Education for Virginia set three goals for higher education in Virginia: access, excellence and accountability. These remain valid goals in 1987. Indeed, it is difficult to conceive different goals in a participatory democracy that takes its constitution seriously and is committed, albeit imperfectly, to equal rights for all persons.

But objectives have changed over the years, as have the ways in which both objectives and goals can be realized. Fourteen years ago, higher education was in the midst of unprecedented growth, not only in enrollment, but in graduate and undergraduate programs, faculty and staff, and buildings. Each budget session was an opportunity to catch up to enrollments that continued to increase. We never have caught up completely, and that is one reason why there is pressure for additional financial support for the colleges and universities.

The state-supported system now enrolls 265,700 students, up from 214,400 ten years ago.

Conditions have changed. Enrollments now grow one percent each year, and a few institutions are experiencing declines or trying to maintain stability. Only one state-supported institution can expect to increase its enrollment significantly in the next decade. The system is more mature and more stable, but the stability ought not obscure the amount of change that has occurred.

Realizing the goals set for Virginia higher education is a balancing act based upon two principles: equity and opportunity. The Council has tried to ensure that Virginia's 39 state-supported colleges and universities are

The biennial operating budget for publicly-supported higher education has increased from one billion to almost three billion dollars over the past ten years.

treated equitably in the budget and get what they need to maintain their operations. It has tried to ensure that the independent colleges and universities are assisted through the tuition equalization program so they can continue to offer educational alternatives to Virginia students.

We have tried to promote equitable distribution of funds among the institutions, demonstrating operating and capital needs through the use of guidelines applied across the system of higher education and by comparison to national standards of higher education financial support. At the same time, the Council has remained open to opportunities for improvement in the colleges and universities. Relatively small amounts of money on the margins of institutional budgets can help to produce profound changes for the better in colleges and universities. Ironically, large amounts of money can produce complacency. Institutions that are managing limited resources effectively are most apt to be alert and open to change.

The Council has had only moderate success in controlling the amount of duplication within the system of higher education. Sensitivity to regional interest, concern for commuting students, state pride and institutional ambitions have influenced the Council to be generally permissive in considering requests to start programs that duplicate others offered in Virginia or nearby states. The result has been a degree of waste within the system. Fortunately, the waste is neither debilitating nor excessive by comparison to other states. Some of it probably is inevitable in a political process. Still, it is a problem that the Council has not dealt with as well as it has others.

Over the past decade, the Council's working relationships with the colleges and universities, the executive agencies and the General Assembly have changed markedly. Less time is spent developing, modifying and defending guidelines for operating budgets and capital outlay. These have been recognized as yardsticks by which equitable treatment of institutions can be monitored, and attention has gradually shifted to providing incentives for colleges and universities to respond effectively to the perceived priorities of the Commonwealth. This shift could reach its high point in the budget for 1988-90.

Generally, institutions and the Council appear to have arrived at a productive understanding of one another's responsibilities and prerogatives. As a result, discussion now usually focuses upon particular issues rather than upon governance of higher education in Virginia.

The relationships of the Council with the state-supported institutions are tidal. It probably is fair to say that many institutional staff who work with the Council view it as either a necessary or an unnecessary evil. Only rarely have there been genuinely cooperative projects such as the curriculum revision and pilot student assessment work being done by James Madison University with Council support, or the graduate engineering television project that has enjoyed good cooperation in some areas of the state.

When the Council provides leadership to increase higher education fund-

ing in times of financial constraint, for the most part the institutions tend to cooperate, although warily. When the budget gains are substantial, as they have been recently, the institutions tend to go their own ways. The ebbs and flows follow fairly predictable patterns and are acceptable provided we recognize the relationships for what they are.

Since 1976-78, colleges and universities have been appropriated $913 million for capital outlay, about $474 million from tax revenues.

The institutions with which the Council's relations consistently are tense are those that are attempting to project images quite different from what they actually are at present. When image differs significantly from reality, the Council will inevitably be regarded antagonistically. Simply by publishing descriptive information about the institutions, it will draw attention to the discrepancy between the image and the reality. In discharging other responsibilities, like selecting peer institutions for the purpose of establishing an authorized faculty salary average or measuring space needs against guidelines, it will do the same.

The tensions in some institutional relationships are manageable in the broader context of mutual respect and cooperation. It is in the nature of the Council's work that it often is an impediment to institutional goals or a prod to induce change. Sitting as it does between the colleges and universities and two branches of state government, the Council often will be in the way if it is doing its job. Still, there are improvements that should be made in the review and approval processes in which we are mutually engaged in order to ensure that they will be as constructive as possible.

The Council's relations with the General Assembly continue to be excellent. Changes in the membership of the General Assembly in the last several years have meant that new personal relationships with individual members have been created. This has been done with good results, although there seem to be fewer members with broad interests in higher education issues than there were in the past. It is worth noting that no one is left in the Assembly from the study commission that recommended the major strengthening of the Council's legislation in 1974. As a result, we need to continue working with newer members of the General Assembly to ensure that they understand what the colleges and universities do, how they are governed, and what kinds of support they need to remain strong. At the same time, we are working closely with the strong and experienced staffs of the House Appropriations and Senate Finance Committees to address issues and put forward the Council's recommendations.

"(Since) the causes of faction cannot be removed . . . relief is only to be found in the means of controlling its effects."

—James Madison

The Council has good personal and professional relationships with staff of the governor's office, the cabinet, and the various state agencies. The major difference in dealing with the executive agencies has been the emergence of the Secretary of Education as a leading participant in determining state policy and funding for higher education under the present governor and his predecessor. In addition, the Department of Planning and Budget has become very sophisticated in building the higher education budget and analyzing institutional expenditures of funds provided.

Since 1984, average faculty salaries have increased almost 40 percent.

Perhaps most important, the Council has come to set the agenda for Virginia higher education. In the past several years, for instance, the Council has brought these issues to the fore and kept them on the agenda:

- *the need for undergraduate curriculum reform,*
- *the need for assessment of student learning,*
- *emphasis upon international education and foreign language study,*
- *continued emphasis upon minority recruitment of students and faculty to higher education,*
- *recognition of instructional and research equipment needs of colleges and universities and development of a program to meet these needs,*
- *acceptance of liberal arts and science graduates as teachers in the public schools as part of an effort to improve teacher education,*
- *recognition that the academic profession, in Virginia's colleges and universities and across the nation, is in a time of transition and uncertainty,*
- *the need for substantial progress in faculty salaries, and*

Adjusted for inflation, the average faculty salary has increased over $5,000 in ten years. Unadjusted, it has more than doubled.

• *the importance of higher education in the economic and technological development of Virginia*

That these issues have, in large part, formed the agenda of higher education is the Council's most significant contribution to Virginia.

In the past ten years, Virginia higher education has made good progress. I cannot assign credit for this progress to the Council, any more than I can assign it to governors, the General Assembly or even the colleges and universities themselves. All deserve some measure of credit for the good and some measure of blame for the bad. On balance, the good far outweighs the bad by any criteria I can conceive.

There are several reasons why Virginia higher education is strong and particularly well prepared to meet the state's needs in the next decade. First, while the premier universities of other states have moved pell-mell toward graduate programs and advanced research, Virginia's colleges and universities have maintained a commitment to undergraduate education. I do not mean to suggest that all is well in Virginia's undergraduate programs. But they are overall in better shape, better positioned to do what needs now to be done, than those of most other states.

Second, we have not fallen prey to the very American notion that "bigger is better." Virginia's colleges and universities remain relatively small. The University of Virginia capped its own enrollment more than a decade ago, and William and Mary has maintained about the same size, with only intermittent and targeted growth. Virginia Tech is one of the smallest first-rate land-grant universities in the nation. The other institutions tend to follow the lead of these three, and the Council's enrollment projections have been a limiting factor on growth.

Everyone seems to keep everyone else honest on the issue of institutional size. The Council sets generally conservative enrollment forecasts, and administrations through most of the past ten years have made clear their unwillingness to provide funds and staff for growth. Legislators have tried to keep funding in line with authorized growth but have not opened any floodgates. It is little noted but significant that almost exactly as many academic programs have been closed in Virginia higher education over the past ten years as the Council has authorized to start. Institutional leaders have warned repeatedly against the homogenizing effect of providing money simply for the quantity of instruction rather than its quality. Altogether, the forces combine to produce a general stability of institutional size.

But the issue of growth has not been completely resolved. The number of high school graduates will increase during the next several years, putting more pressure for admission on state-supported colleges and universities. Then the number of high school graduates will plummet until about 1996, but unevenly across the state. Some institutions should grow in the next five years while others do not. The relationships among the various sectors of Virginia higher education—state-supported senior institutions, the community colleges, and the private institutions—will change in light of population forecasts through the end of this century. We may need to enlarge the system of higher education as the state's population grows and shifts over the coming decade.

Finally, there is the unusual but commendable cosmopolitan attitude of Virginia's leaders about the state's colleges and universities. Thomas Jefferson laid down the basic principle in founding the University of Virginia: a great state university must be a great national university. Virginia's colleges and universities have not been subject to a state-imposed limitation on out-of-state enrollment. The Council has encouraged general stability in out-of-state enrollment at some institutions and increases in some others through its enrollment projections.

The colleges and universities have started about 370 degree programs and have discontinued about 360.

Here again, all is not as it should be. The balances are generally good, but the state's two traditionally black universities have turned increasingly to out-of-state enrollment as competition for the in-state pool of black students increases. This has the positive effect of attracting more talented persons to Virginia, many of whom probably remain here to live and work. But the decline of high school graduates in other states will be greater than in Virginia, and too great a dependence upon out-of-state enrollment is a threat to the health of these universities. Virginia State is particularly vulnerable; Norfolk State less so, but both should be aware of the danger.

Several Virginia colleges and universi-

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"What's Past is Prologue"

ties have achieved new levels of national recognition. The University of Virginia and the College of William and Mary are noteworthy today not merely for their origins and founders, but because they have become truly distinctive state-supported institutions of higher education. These two institutions probably offer the most selective undergraduate programs in American public higher education.

Virginia Tech is one of the most selective land-grant universities in the nation. Its recent progress as a research university demonstrates to American higher education that there can be an effective union of undergraduate education and advanced research and graduate programs. The university is strapped financially, primarily because it grew rapidly in the late 60's and early 70's and never acquired the faculty or space to accommodate its enrollments. In addition, it is operating a veterinary college whose costs were under estimated. Notwithstanding these difficulties, Virginia Tech is a stronger university today than it was a decade ago. It is a good example of blending reasonable size and generally high quality.

One of the most gratifying developments of the past decade has been the emergence of James Madison University as a highly selective university with a strong commitment to undergraduate education. Madison's success can be attributed to its leadership, but structurally it results from a confluence of favorable demographics, a favorable competitive position, and a clear sense that in order to be distinctive, the university could not be all things to all people. Its progress over the past ten years places it on the verge of national recognition. Its continued ability to choose the direction in which it wishes to go makes its future very promising.

Twenty years ago it was clear that Virginia's major universities were not located where the people were going to be. This is hardly a situation peculiar to this state, and responses to the dilemma everywhere have been plagued by difficulty. But Virginia has avoided the worst traumas by continuing to fund institutions equitably while creating three strong doctoral universities in its most densely populated regions.

Each of the universities is different, built upon the distinctive characteristics of the region it serves and grounded in its own history. Virginia Commonwealth University is a major research institution, primarily in the health sciences, with one of the largest university medical centers in the United States. Old Dominion University serves one of the nation's greatest seaports, its manufacturing and transportation industries, and a large military population. George Mason University is emerging as one prototype university of the 21st century, suburban rather than urban, seeking a blend of technological sophistication and culture that characterizes white-collar, professional segments of our society.

These three new universities, forces in their own right, do not and should not offer all the programs of fully comprehensive universities. But they offer many of them, and arrangements have been made to augment their offerings by televised instruction and by off-campus programs offered by other universities. Political give-and-take has produced a certain amount of duplication, but not too much. The most important point is that they were not cast from the same mold. Each needs now to focus more intensely upon some specific activities or fields of study and to become very good at them. This is the logical next step in their development.

The eminence of several Virginia colleges and universities reflects the unusual nature of all. Radford and Longwood have made successful transitions to comprehensive institutions of arts and sciences. Mary Washington has continued to improve as a rarity within public systems: a college of the traditional arts and sciences. All three institutions are popular and their enrollments are strong. Norfolk State has become one of the better traditionally black universities in the nation. The Virginia Military Institute continues its traditional mission but has modified its curriculum to reflect the ubiquity of computers. Christopher Newport and Clinch Valley continue to meet needs for baccalaureate education in their regions of the state.

Virginia State University remains a troubled institution. It has not made the progress it should have in the last five years, and is the only institution that has lost substantial enrollment over the last ten years. The board of visitors is taking actions to improve the curriculum and management. It may be desirable to reduce enrollment systematically to a lesser number of qualified students, and then to rebuild the university upon a more solid foundation.

The Virginia Community College System, whose campuses were just being completed ten years ago, has gone through a difficult but productive period of maturation. For a few years the colleges were limited only by their capacity to serve. Then came an enrollment dip, a period of stability and some growth, and then another dip.

Through it all the community colleges have continued to serve as the primary local providers of higher education throughout Virginia. Despite past management problems and enrollment variations, they are fulfilling their primary missions: to provide occupational and technical instruction in preparation for work and to provide the first two years of college study for people who then

transfer to get bachelor's degrees.

The system was conceived and developed as 23 colleges with the same kinds of programs and other characteristics. This uniformity was important in the early years of the system. I am inclined to think that it should be reexamined now. Several different kinds of community colleges have developed within the system in response to different social and economic conditions throughout the state.

At the end of ten years, we have a larger and much better system of state-supported colleges and universities. We have a set of solid private institutions of higher education, some of which have made excellent adjustments to the realities of changing state and national populations. Relations between the public and private sectors remain generally good, although there is an understandable tension as the public institutions have grown to enroll six times more students than the privates and as the public institutions have perceived that their margin of excellence finally depends upon private fund-raising.

The Tuition Assistance Grant for private college students has increased from $400 to $1,250 in ten years.

Some private institutions are threatened by the dominance of the state-supported system, but none has closed in the past ten years. The Tuition Assistance Grant Program has been a great help to the private sector, giving each Virginia resident who enrolls in a private college or university an annual grant that will be $1250 next year. I think we can do some other things to help maintain strong private colleges and universities in Virginia, but the policies and actions of the past decade have been effective in meeting this objective.

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What We Should Do

College and university administration is not easy today, if it ever was. The daily operating pressures are great and tend to consume the time and creativity of those responsible for dealing with them. There is little opportunity to reflect on larger, systemic and long-range issues, and often little reward for doing so.

The genius of a system like Virginia's is that the Council of Higher Education's role is to reflect on these issues at some distance from the constant pressures of institutional management. We can do this not because we are smarter than our colleagues but because it is one of our primary responsibilities. We are gadflies, and part of our job is to prod others to look beyond the next budget cycle and the status quo. The Council is the advocate for higher education but not for any one institution of higher education. This distinction is difficult to grasp, but it is important to the health of Virginia's system of colleges and universities.

If we have made great progress over the past ten years, moving Virginia's colleges and universities into the forefront of American higher education, problems clearly remain, and several opportunities for more effective service to Virginia have not been seized.

Institutional faculties should be reviewing the curriculum with greater intensity than they are. This is true of the undergraduate curriculum but even more of graduate and professional programs. Teacher education has attracted the most attention, but the changes proposed thus far have been superficial. They have involved changes in the kinds of courses that must be taken, but not in the content of those courses. The requirement that prospective teachers major in the arts and sciences, for instance, will have little effect if we do not thoroughly review the arts and sciences curriculum. Indeed, the new requirement may give the appearance of solving one problem, while actually creating several more.

More than one-third of all bachelor's degrees now are awarded in business.

The concern that students are not well or generally educated when they graduate with bachelors' degrees has most often been addressed by changing the number of courses that must be taken in each discipline. But this kind of curriculum reform has occurred every 30 years or so in American higher education. It is safe and unsatisfactory.

The very organization of what we call "knowledge" ought to be questioned. Its division into the standard disciplines is an historical accident that no longer can be justified on grounds of utility or reason. The "traditional" arts and science disciplines did not even exist 90 years ago. They are products of the generation that developed the fundamental principles of our industrial system, our economy and our role among nations. Like these principles, the arts and sciences curriculum ought be subject to rigorous scrutiny, for we live in a new world. Certainly we ought not feel tied to the past by the current curriculum.

The content of the disciplines ought to be questioned, as should the methods of inquiry applied to that content. Both are the products of a particular time when only a very narrow portion of the population had access to higher education. A dominant social group created much of what has come to be taken as authoritative. New approaches and questions need to be considered.

Large parts of this nation are now populated predominantly by persons whom we call "minorities." The majority has become a minority in southern California, at the University of California at Berkeley, in the New York City public schools, and in other places. We cannot continue to teach English literature as if it were roughly synonymous with literature itself, or European and American history as if the history of the rest of the world were footnotes to it. Surely there are theories of literary criticism other than those derived from Aristotle and historiographies that are not western.

What we typically teach as the history of music, for instance, is the history of sponsored music in western culture: sponsored by church, court and corporation. There is other music, of other races and places, of peoples whose voices have no access to church, court and corporation. It is music that has no history because we have not given it one.

". . . a distinctive social order generates its pattern of values, commits the hearts of its members, and creates a myopia which certainly seems to be inevitable."

—Mary Douglas

Well over half the students in our colleges and universities are women. But despite recent suggestions that women "know" in ways that differ to some extent from those of men, we teach and use methods of inquiry that derive almost totally from our experi-

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What We Should Do

ences with late-adolescent males.

It is possible for Virginia colleges and universities to be good at what they do and yet to do what is irrelevant or even damaging in the long run. Complacency is a great threat, the greater among institutions that are very old as American institutions go or that list illustrious Americans in their past. We may have a better system of higher education than most states, but we are at greater risk of complacency as a result. This is why it is so important now that the Council vigorously promote change within Virginia's system of higher education.

Scores of studies have reported what is wrong with our educational systems at all levels. None has penetrated sufficiently beneath the superficial level of shuffling courses or content. I suspect this is because the American people and their pundits, politicians, and educators do not believe that there is anything fundamentally wrong with our schools, colleges and universities. Just a good dose of common sense, more time at the desk, more emphasis on basics, and all will be well.

As a result, our reforms are superficial. They help people accommodate to existing conditions rather than to change them. At least in our educational systems, but probably in other facets of our society as well, we have come to use crises as ways to let off steam, so that nothing really will change. We may use crises to raise teachers' salaries or even to raise taxes, but the basic flaws are not examined. "Crisis" has become a trivial word.

Important changes are needed in the educational system and, in particular, in our colleges and universities. They all come back in the end to the curriculum: to what we know and how we know it. But the issues that call for change can be identified more specifically.

First, our colleges and universities should help to set social goals, at either the national or the state level. Part of higher education's responsibility is to examine and challenge prevailing orthodoxies, even its own. We should be more active social critics than we are. Nowhere is this so clear as in the public debate over teacher education. Institutions of higher education should have led the way in public school reform. Instead, they have appeared confused, divided among themselves, protective of their established ways of doing business, and susceptible to change only under pressure.

American research and scholarship is concentrated in colleges and universities to a greater extent than in other nations. Effective connections between higher education, the domain of the theoretical, and the domain of practical application are therefore essential. We have made some progress here but not enough, and use of current jargon and cliches ("technology transfer," for instance) will not in itself make the connections needed.

Third, added to confusion and complacency about what students should be learning, we do not know in fact what they are learning or how well. Neither do we know whether they are prepared to participate in collegiate study. This is not simply a matter of administering machine-scored, multiple-choice examinations. Few things are as difficult to assess as whether or not a human being is acquiring the abilities necessary to remain well educated throughout a lifetime. Nevertheless, we ought to try to make that assessment. When higher education was generally restricted to persons of one sex, race and class, the ability of that group to maintain control of society was assessment enough. But colleges and universities play a different role now, at least in principle, and assessment of learning is an institutional obligation.

The three major universities—UVA, VPI and VCU—have increased their research grants from $35 million to $150 million over ten years.

When different approaches and priorities are proposed, either from within the higher education community or from without, a standard response is to ask for more money. Change is conceived as being in addition to all that is currently in place, rather than as a fundamental reallocation of effort and resources.

Money may be needed to effect changes, but only in relatively small amounts to encourage institutions to take risks and to support them during transitions. The failure to provide leadership and the failure to change are not due to lack of resources. What is missing are will and imagination.

Second, higher education in Virginia should serve the broader society better than it does. This is in part a commentary on the curriculum, but it also is a commentary on the way we translate the work of scholars from the library and the laboratory to practical application in business, government and other social institutions.

Fourth, the price of higher education to students and their families should be better controlled, both in Virginia and across the nation. There are several reasons for rapid increases in price, each of which requires a different response.

We have indexed tuition to general

fund appropriations. If the governor and General Assembly decide, as a matter of policy, to provide substantial increases for faculty salaries and other items, tuition must increase along with the general fund appropriation. It may be time to establish a new relationship between them.

But Virginia's increases in tuition generally have not exceeded increases in the cost of living. The mandatory fees charged by some colleges and universities for services and activities that are peripheral to the instructional program, on the other hand, have increased at a far greater rate. These fees can make the difference between an affordable education and one that is out of reach.

One of higher education's great successes in getting more student financial aid money has been its ability to focus attention entirely on the question of how much a student or her family should be expected to pay. An equally important question is how much an education should cost. But this question never has been placed on the agenda for public discussion.

The colleges and universities have added 2,900 black, 10,600 other minority and 37,600 white students to enrollment over ten years.

Fifth, higher education should include greater numbers of racial minorities among its students, faculty and administrators. Indeed, the rate of participation as students by black Virginians has not increased in recent years.

This is partly a question of money, but not necessarily of new money. It is also a question of will and of priorities. If equal educational opportunity and affirmative action are viewed as incidental social objectives of higher education, then they will have low priority. But if they are seen as critical to learning—

Enrollment has increased by 51,000 over ten years.

to what is taught, by whom, and to whom—then they clearly are at the heart of the entire enterprise. No curriculum reform that ignores the composition of the faculty and student body is sufficiently comprehensive.

Finally, and related to minority participation, Virginia higher education should include more study of women's experiences in the curriculum and more women among its faculty and administration. Many of the same observations made about minority participation apply also to women, but there is a twist. For women now comprise well over half the students in Virginia's system of higher education.

But visibility is not empowerment. In ten years there have been two women presidents of state-supported colleges and a handful of senior administrators. Movement toward recognizing the distinctive experiences of women, more than half the human race, in the curriculum has seldom gone beyond including a few women poets in a literature survey, or a women's history sequence among electives, or a course on "marriage and the family" in the social studies listing. These are all good things to do, but they are pitifully insufficient.

So the question is raised again: do we want real curriculum reform, or do we want safe change that will permit things to remain the same? The answer depends on whether the American people, or the people of Virginia, think that our children's lives in the 21st century will or should be substantially different from ours in the 20th. If we think either is true, we need to change what is taught to whom, by whom, and how.

If substantive change is going to occur in Virginia higher education it will be most likely in a system of loosely coordinated colleges and universities that have room to maneuver, room to take advantage of opportunities and new ideas. Change will occur when the conditions for it have been created. The rigorous self-examination that I am proposing, which carries with it the need to question established ways of thinking and doing, is particularly difficult to

During the same time, women's enrollment has increased by 38,000.

cause. The conditions under which this change will occur include:

- *a vision of what is desirable and possible,*
- *incentives that motivate people to act, and*
- *disincentives to inertia.*

I turn, then, to some specific recommendations.

■ ■ ■

Virginia's budget procedures should include incentives for change that conform to perceived state priorities. Colleges and universities that respond effectively to the needs of the state should receive more money. Those that do not should live with no more than base funding.

The most immediate priority is clear: reform the curriculum, starting with undergraduate education and finally including graduate and professional as well. High quality undergraduate programs are the most valuable asset of Virginia's colleges and universities. We should build everything upon this

strength. The Council of Higher Education should be both a resource for institutions seeking assistance in curriculum review and a monitor of the changes that occur. It should be funded to discharge this new responsibility.

"... no matter how precisely governmental officials attempt to define objectives, the outcome will largely depend upon the cooperation of those in the system."

—Burton Clark

But the Council can only assist with change. The curriculum is the professional responsibility of the faculty, who will have to see both to its reform and to their own preparation and continuing education. We can help to create the conditions under which change will occur, and we can report and explain change to higher education's political constituencies. The faculty are in the classrooms and the laboratories, actually making it happen.

Among the characteristics of an adequate undergraduate curriculum are these:

- *it involves students as active learners rather than as passive recipients of information;*
- *it is self-reflective, in that the faculty continually assess the goals of their teaching and whether they are being met;*
- *it recognizes the broadest possible range of human experience;*
- *it rewards teaching at least equally with research, and is organized so that the most experienced faculty teach entering students;*
- *its teaching methods are fitted to the material and learning objectives;*
- *it constantly explores connections and relationships among the academic disciplines;*
- *assessment of student learning in light of clear expectations is part of each faculty member's responsibility; and*
- *it includes a summative experience, such as a thesis, recital, senior seminar, or comprehensive examination, for every student.*

Learning will improve only if teaching improves. The graduate education of prospective faculty members should include formal preparation for teaching. It is presently focused almost entirely on developing the research skills appropriate to their particular disciplines.

We fund research only when it is excellent as judged by peers. But we fund teaching whether it is any good or not, and peer review is almost never conducted. We need to change the education that prepares women and men to teach, the reward system so that it reflects a high priority for teaching, and our expectations for the continuing education of faculty as teachers.

We often say that Virginia's diverse system of higher education offers a place for every person who wants to go to college. We provide special funding for students who need remedial or developmental help in order to gain a secure foothold in higher education.

We also should provide special funding for exceptional students, the intellectual leaders among their peers. These students need special curricula to challenge their abilities: honors programs, colloquia with visiting lecturers, internships and other off-campus experiences, and so on. Such curricula cost more than the normal general education and majors, just as remedial and developmental studies cost more. An objective of student assessment programs should be to identify the pool of intellectual leaders at each institution, and to create the most exciting curriculum possible for that pool.

Among the graduate programs offered by Virginia's universities are some that are nationally and even internationally recognized. The Center for Innovative Technology has announced plans to designate some of these programs as Commonwealth Centers of Excellence and to provide them with additional funds that will improve them even further. The CIT centers will be in the scientific and technological disciplines.

The Council of Higher Education has agreed to extend the Commonwealth Center concept to disciplines that would not be covered by CIT's charter. The historic strength of Virginia's colleges and universities is in the humanities, and we should ensure that their development includes these disciplines. We should have Commonwealth Centers in such fields as languages and literature, American history and cultures, psychology, and the fine or performing arts. We should have one in education, providing badly needed leadership, and possibly one in business or law.

"Without poetry, our science will appear incomplete . . ."

—Matthew Arnold

The Commonwealth Centers will be selected by panels of leading scholars and practitioners throughout the nation. They then should be evaluated periodically to ensure that they continue to be among the best in American higher education. While the lead institution in each probably will confer doctoral degrees in the center's area of specialty, two or more institutions could

combine to propose a center. Each center should advance scholarship and research but also should contribute to an enriched undergraduate curriculum.

I am proposing that we recognize and encourage truly national excellence. This is not a proposal for a public relations campaign. "National excellence" is not hyperbole for "pretty good." This will be just another way to spend money if we scatter Centers around to be sure all the political sensibilities are satisfied.

The concept of public service is not adequately conveyed to undergraduate students in American higher education. I think young women and men would respond to a call for them to give back to their nation and their state some of the benefits of their education. But they are not asked to do so.

Using the concept of work-study, Virginia should develop a program of state service in public schools, correctional institutions and hospitals, and state parks and other recreational facilities. Students, especially those who are young and have not participated in some form of public service (such as the military or the Peace Corps), should be encouraged to participate in public service work as part of their degree programs.

We need to find a way to involve older women and men in study at the colleges and universities. Access to higher education is important in maintaining skills that are needed as jobs change because of technology and new industries. More important, programs of lifelong learning can help people deal more effectively with the changes that occur as they progress through the stages of adult life.

Several years ago I proposed that we start a program to give every Virginia resident access to one tuition-free year of study (full- or part-time) for every seven years she or he worked (including homemaking as work): a work-force sabbatical. My proposal was greeted, to be charitable, with whimsical skepticism. I still think it is a good idea.

The percentage of students over 35 has increased by about 4 percent, while the percentage of younger students has decreased over ten years.

But whatever the program, continued study throughout adult life will be important in the next several decades. The need for continuing job training is self-evident; people who are 30 today may have as many as three careers and ten jobs in their lifetimes. The need to seek new understandings of self and society as we grow older is not equally self-evident. But we shall want to feel useful, to be excited by new readings of old texts, to be challenged by unanswered and perhaps unanswerable questions. Continuing education could help to make our society more cohesive and energetic as the population grows older.

We need to do more with educational and employment equity issues. We can increase the numbers of black students at Virginia's traditionally white institutions, but we need to recognize that there is no quick fix. The expectations of black parents and youth must be changed, and students must be guided toward college at least by their middle-school years. A larger and better-prepared pool of black students has to be produced by the public schools. Higher education has an obvious stake in helping to make these changes and a responsibility to do so.

Institutional eligibility for incentive funds from year to year should be based, in part, upon the quality of institutions' efforts to enroll and retain minority students. Some financial aid money appropriated to institutions should be earmarked for minority and women students. Single-parent households, usually headed by women and often by minority women, are the most threatened in our society. They need help, and we can make access to higher education more possible by allowing part-time students to receive aid from institutional financial aid programs. Self-supporting child care programs would make it easier for many women to study and work at institutions of higher education.

The equity issues in employment include hiring more minority and women faculty members and ensuring that they are equitably paid. The discrepancies in hiring are marked but can be lessened. To do so, we shall need to develop a larger pool of minority graduate students. While each state, including Virginia, can work at this, it actually is a national issue that might be addressed by the nation's governors or by the federal government. There is too much mobility from state to state for any one to be fully effective on its own.

Salary equity between women and men faculty members is an important objective. Each institution should assess its faculty by discipline, rank and years of experience to determine whether its salaries are equitable across both sexes. Salary increase appropriations can be used to correct whatever inequities are found to exist.

It is important to remember that increasing minority enrollment and the numbers of minority and women faculty are curricular issues. Who teaches and who learns are inseparable from what is taught and how. If these issues are treated as compliance problems, they

will be shunted to an office on the edge of campus as a low priority.

Along with revitalizing the curriculum, we need to know how well our colleges and universities are meeting their teaching goals. Assessment of student learning is, first and foremost, self-assessment of institutional performance. Its point is not to list institutions in rank order, but to give institutions information they can use to improve their programs.

Each college and university has been directed to develop a program to assess student learning. This, too, is a curricular issue rather than a mere matter of compliance. The programs for assessment will be described in *The Virginia Plan for Higher Education* and their results made public. Institutions should be rewarded for the quality of their assessments and for steps they take to improve the curriculum as a result.

The Council of Higher Education should begin a program of program evaluation, using the leading scholars and educators in the nation to assess programs, starting at the doctoral and professional levels. Programs that do not pass muster should be placed on probation for a specific length of time, and the institutions should develop plans to correct deficiencies. If they do not improve, they should be discontinued.

These evaluations should supplement the program productivity reviews now conducted by the Council. They could build upon or replace the task force studies of various programs that have been sponsored by the Council during the past five years. A single program evaluation effort would make better use of Council and institutional resources and would produce more valuable reports for the higher education community.

The Council collects large amounts of data from the colleges and universities and publishes them in technical reports. But these data are not converted into information that would help Virginia citizens make various kinds of decisions about the institutions: where to enroll, where to seek assistance of one sort or another, whether to be concerned about the health of a particular institution.

The Council ought to begin publishing every year or two a profile of institutional indicators to help inform the public. Among the indicators might be these:

- *The number of applications received each year for the past five years;*
- *The number of applicants offered admission;*
- *The number of those offered admission who accept it;*
- *Trends in the Scholastic Aptitude Test scores of entering freshmen, indicating the range of scores and the percentage of students in each quartile;*
- *Trends in the high school courses taken by entering freshmen;*
- *Composition of the student body by race and sex;*
- *Composition of the faculty by race, sex and tenure status;*
- *Percentage of the operating budget spent on instruction and on library materials;*
- *Expenditures per student;*
- *Percentage of the instructional budget spent on remediation;*
- *Retention rates of the students who start and the percentage that continue, stated by race and sex;*
- *Degrees conferred by major over a period of five years;*
- *Graduation rates of the students who start and the percentage that graduate in four, five and six years, stated by race and sex;*
- *Entrance requirements, academic performance reports and graduation rates of athletes in major sports;*
- *Number of athletic and other non-need scholarships;*
- *Number and percentage of courses taught by graduate teaching assistants; and*
- *Post-graduation profiles of recent classes, including enrollment in professional and graduate schools and employment in commerce, teaching, government, etc.*

The Virginia Community College System should be assigned greater responsibility for the state's basic adult education programs. Where possible, the community colleges should provide the General Educational Development (GED) program and the adult developmental and remedial education courses for Virginia's educational systems. Because of their experience in dealing with adults and their designation as "colleges," they will attract persons for whom returning to high school is perceived as an embarrassing stigma.

Basic adult education, followed by occupational training or college-transfer programs of study, is one important economic development role for the community colleges. Beyond this role, these regionally based institutions can be instrumental in supporting new industries contemplating relocation to Virginia. Most of the workforce must be skilled in one way or another, and the VCCS is one of our most important instruments of economic development.

Higher education's role in economic development needs to be increased. The Center for Innovative Technology got off to a slow start, but its mission has been clarified and a plan for its activities approved. It is important to remember that CIT is at least as much an idea as it is an institution. It is the place where highly abstract intellectual activity confronts the need to create and preserve jobs. This is neither a purely political nor a purely commercial activity. Turning ideas into concrete, working relationships is an unusual challenge, but that is precisely the responsibility

of CIT.

The intellectual activities of Virginia higher education do not often enough yield marketable products. If faculty were more aware of the potential commercial applications of some of their work and if they were assisted actively in transforming their work into intellectual property, Virginia, the universities and individual researchers would be well served.

Among the nation's universities, VPI ranks 49th, UVA 59th and VCU 86th in total research volume.

The CIT should take steps to ensure that the potential commercial applications of research it has sponsored are legally protected. By creating a venture-capital corporation in which it is a major partner, it should invest in product development based upon research it has sponsored or any other research brought to it by universities for commercial development. Most new jobs are being created today in small, specialized companies. The CIT should help to create such companies based upon research done in Virginia universities. It should encourage greater use of federal research facilities and should help whenever possible to match research done in the private sector with the capital needed to develop marketable products. CIT could become a major broker in creating new companies and developing new products for market.

While the work of the Center for Innovative Technology and of the Virginia Community College System with existing Virginia industry and new companies coming into Virginia is very important, the quality and variety of undergraduate experiences available in this state are finally the most important contribution higher education can make to economic development. This is a good state to live in, in part because of Virginia's public and private colleges and universities. The privilege of paying in-state tuition to attend one of the public colleges, or of receiving a tuition assistance grant to attend one of the private colleges, is an important employee fringe benefit to companies choosing to locate in Virginia. We should convey this message as forcefully as we can.

Another way to increase higher education's involvement in economic development is to offer industries that might move into Virginia vouchers redeemable for specialized job training or advanced education at any college or university in the state. The Department of Economic Development could offer such vouchers, perhaps ranging in amounts from $50,000 to $200,000, depending upon the number of employees, the complexity of the training involved, and other factors. Representatives of higher education could help industries select the institutions from which they would request services.

Despite enormous efforts and expenditures and despite signs of improvement, Virginia's high schools remain uneven in the kinds of preparation, collegiate or occupational, they offer their students. This is primarily an issue for the State Board of Education, and colleges and universities have at best an uneven record when it comes to solving problems in other social or educational institutions. But they can act in some ways to help the secondary schools.

First, the colleges and universities should change their admissions criteria to reflect the more rigorous high school curriculum now required of college-bound students. This is not a matter of raising standardized test or grade point average thresholds but of requiring foreign languages and other academic courses for admission. The colleges and universities must support the new high school graduation requirements, or students will circumvent them.

The expansion of higher education's commitment to foreign language instruction is only part of the international emphasis that should be given to the curriculum. We need more instruction in non-western languages and cultures, particularly those of nations with which we are most involved politically and economically. The Department of Education is starting summer institutes where selected high school students can study foreign languages. Our colleges and universities have to be ready for these students when they arrive in higher education. More important, higher education has an opportunity to contribute to Virginia's international economic development.

In 1977, 93 bachelor's degrees were awarded in computer science. By 1986, the number had risen to 965.

After providing ample notice to allow students time to plan their high school careers, Virginia's colleges and universities should require completion of the current 22-unit high school curriculum for admission to degree status, except to the occupational-technical programs offered by the community colleges. This requirement would have to be administered flexibly to accommodate students who are disadvantaged by school districts that do not offer an adequate range of courses in foreign languages and mathematics. It would provide further encouragement to all school districts to strengthen their high school

programs.

Along with this requirement and again after providing ample notice, Virginia's colleges and universities should decline to accept applicants who take the 20-unit curriculum in high school. Again, the exception should be community college occupational-technical programs. The 20-unit curriculum is not an adequate preparation for baccalaureate study, and higher education should help to make this clear to students and their parents.

Second, the most selective colleges and universities should clearly and broadly state their requirements. Regular advertisements of what they expect of students seeking admission should be placed in the state's newspapers. Mailings should be done to all high schools. Students and counselors must know what is expected by the colleges and universities.

Third, the state work-study program should be funded for the first time to permit local school districts to employ college students as teacher's aides, graders, tutors and general administrative support staff for teachers. This would allow teachers to spend more time with students and would provide college students with a form of financial aid that is also satisfying public service.

Students who attend Virginia's private colleges are eligible to receive Tuition Assistance Grants that help to reduce the gap between the costs of public and private higher education. In 1987-88, approximately 13,000 students will receive grants of $1250. The program now costs over $15,000,000 a year.

Other things can be done. We should re-evaluate the Tuition Assistance Grant Program, asking whether continuing to increase the grants in their present form is the best way to maintain a healthy private sector of Virginia higher education. In addition, we should provide help to more private institutions seeking to finance capital projects, particularly renovations of older classroom buildings and dormitories. The guidelines we have used for almost two decades preclude all but the very best-endowed private institutions from participating in services offered by the Virginia College Building Authority.

Bachelor's degrees in foreign languages during the ten years increased by six, from 240 to 246.

Finally, we probably should develop a tax-exempt savings program that will encourage parents to begin planning for their children's higher education years before the bills must be paid. This is an issue that affects both public and private higher education. I include it here because some of the programs being considered in other states threaten private colleges and universities by encouraging saving only for public higher education. We should design ours to give students equal access to institutions in both sectors. There is some slight possibility that a federal program will be started. Unless this happens, we should begin detailed planning for a Virginia program.

Enrollment in Virginia's colleges and universities remains generally strong, but there are signs of stress. General steps could be taken to help make college more affordable for Virginians and to manage the distribution of enrollment more effectively. The greatest increase in price has come not in tuition charges but in fees for peripheral services. Colleges and universities compete for student enrollment and for public support by offering a wide variety of services and facilities that are at best indirectly related to higher education: intercollegiate athletics, with stadiums and coliseums; health services; entertainment; and so on. These services and facilities are supported by mandatory fees. In some Virginia institutions, such fees have increased far more rapidly than the cost of living over the last ten years.

Students and their parents, as consumers, appear to want many if not all of these services and facilities. But they may not realize the price they pay for them. In addition, both state and federal governments pay for them through financial aid programs based on need. Finally, mandatory fees for peripheral services may extract a large hidden social cost if they prohibit young women and men from attending college.

The cost of peripheral facilities and activities such as intercollegiate athletics, arenas and student centers should be contained by limiting the fees colleges and universities can require all students to pay for them. Whenever possible, peripheral student services should be made optional to those who want to pay for them. The fact that a service or activity cannot be sustained without assessing mandatory fees is a good indication that it should not be offered at all. These steps, plus a form of public disclosure that would be a kind of "truth in packaging" for higher education prices, would give students and their families far more control over the price they pay for higher education.

Student financial aid should not be used to pay for peripheral activities and services for which fees are charged. At present, for instance, support for intercollegiate athletics is built into a general fee, which in turn is considered in deter-

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mining how much financial aid a student needs. Both state and federal financial aid are being used to support services and activities unrelated to the major missions of higher education.

Enrollment pressure will continue in some parts of the state, especially in northern Virginia. The combined effects of burgeoning population growing out from the District of Columbia to the south and west and a virtually gridlocked highway system will make access to George Mason University's Fairfax campus impossible for many potential students.

George Mason foreseeably will enroll the equivalent of 20,000 full-time students sometime in the mid-1990's. By then, there will be centers of commerce and population some distance from the District, each being a location to which people commute. These centers will require higher-education services that cannot be provided by a university located in Fairfax.

George Mason could develop satellite campuses across northern Virginia, but this is not a very good solution. Satellite campuses, or branches, are invariably perceived as inferior to the main campus, and they usually are. Besides, a multi-campus, regional university that enrolls far more than 20,000 full-time equivalent students would be anomalous within the Virginia system of higher education, whose major universities enroll about 20,000 students.

We should begin instead to plan the establishment of a new university in northern Virginia, probably along the major highway to the west. The growth of commerce and population to the south can be served by Mary Washington College's fine undergraduate program and by graduate programs offered by other institutions on its campus. We may find, however, that the pressure of economic development and population growth in the corridor between Richmond and Washington will force Mary Washington to change its special character as a small college of the arts and sciences. Economic and demographic demands may cause it to become a larger and more comprehensive institution.

The establishment of a new university to the west, offering undergraduate and probably some graduate programs, would serve development in that direction. There soon will be the economic equivalent of a large city in that part of the state, not a city as we traditionally think of it, but a more dispersed distribution of commerce and population. A university in its midst would serve that region, and also would give the northwest corner of Virginia greater access to state-supported higher education.

A new university will not be needed before the end of the 1990s. But we ought to begin considering it as an alternative now, before making other commitments that will foreclose our options.

■ ■ ■

To conclude this section of my report, I offer some thoughts about how the Council might work even more effectively within a system of higher education. I think this requires that we use the Council's responsibilities to create more situations in which both the Council and the institutions assess themselves and the system of higher education. The Council and Virginia's institutions of learning should become institutions that learn through continuous self-assessment.

Standard conceptions of higher education systems, colleges and universities—and indeed, of complex organizations in general—are unduly atomistic. We have tended to deal with different aspects of the system or with individual institutions in the system as if they were unconnected, when in fact every aspect of a complex system or institution relates to every other aspect. In trying to provide coherence to the system's academic development, capital and operating budgets and institutional missions, we have created a series of distinctions within which we have applied different policies and procedures. Each policy might make sense, and each set of procedures might be coherent in itself, but they do not come together well enough as a whole.

The example of academic programs might help. The Council is required to approve new programs, discontinue non-productive and excessively costly ones, and avoid unnecessary duplication.

But "academic programs" are an abstraction. They are what higher education sells, but they are not real in the organizational or financial structures of colleges and universities. What is real are faculty, the departments and schools with which they are affiliated, the courses they offer, and the students who take them. Out of a multitude of discreet courses, guided by requirements that range from strict to permissive, students construct an "academic program."

When the Council approves or disapproves a program, it is operating at a high level of abstraction. The program may be disapproved, but the courses still can be offered. The faculty who would offer it remain, or even can be hired, and the institution's resources consumed. Only the packaging is affected, the institution's ability to put a set of courses together and call the result by a particular name.

The same is true when the reverse process occurs: closing a program because it is not productive. No faculty need be let go as a result, no courses discontinued, no resources reallocated. We do not fund academic programs. We fund faculty salaries, operating

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expenses and maintenance of the physical plant. There is a curious disjunction between the abstraction "academic program" and the pressure points that actually could affect institutional behavior.

This disjunction makes it almost impossible to close an academic program because it is excessively costly or to refuse to approve one for the same reason. Because we do not appropriate funds for academic programs, in one sense they cost nothing. Their component parts, largely unaffected in the short run by Council program actions, directly consume the resources appropriated to the institutions.

One way to deal with the disjunction between the abstraction and the components that consume resources is for the Council to approve courses or even faculty appointments by academic specialty. This may be attractive, but it also is wrong. No central board, however excellent its members and staff, can make good decisions about course content or faculty appointments in 39 colleges and universities scattered throughout the state. The desire to control too much has a deadening effect upon a process we value greatly but actually do not understand well at all: human learning, growth and development.

". . . in all cases where power is to be conferred, the point first to be decided is, whether such a power is necessary to the public good . . ."

—James Madison

If we ought not control directly the pressure points, we appear to be left with only the illusion of control. I do not think this is correct, but we should be clear about the kind of influence the Council has, how it is exercised, and how it can be used more effectively.

In the first place, while program approval and reviews for productivity are not exactly what they seem to be, neither are they entirely useless. They serve a consumer information and protection function by controlling the degree programs an institution may advertise. They further serve a housekeeping function, removing unnecessary programs from the inventory or preventing them from cluttering it to begin with. In the long run, they influence how an institution will build its faculty and allocate its resources, even though the causal relationship will not be clear over periods as brief as a two-year budget cycle.

In the second place, the Council's responsibilities for academic programs can provide occasions for institutional learning, occasions when both the Council and a college or university examine their respective patterns of thought under the pressure of having to make a decision to start or stop a program. Properly conceived, this is a tough-minded but not necessarily adversarial process whose success is measured not by a won-lost record but by whether learning has occurred and a good decision has been made. It is not pleasant to go through—critiques seldom are—but it should be a technique of curriculum reform.

We have a long way to go before program actions play this role to the extent they should. We are revising the procedures, but the process is still too competitive, too static and mechanical, to yield much learning. We are too apt to receive proposals or initiate reviews, make decisions, and then communicate them. This "black box" behavior makes many decisions appear arbitrary and insensitive to institutional and other needs. College and university administrators, for their part, are too apt to treat each program as unrelated to all the rest, to minimize actual program costs, to value the public-relations advantages of large program inventories above curriculum coherence, and to ignore the use of program review and approval in curriculum assessment.

"Institutions create shadowed places in which nothing can be seen and no questions asked."

—Mary Douglas

After ten years, we still are exploring how to do our job and still trying to create processes in which the Council and the colleges and universities can learn within a system. One of the great ironies of our work is the extent to which institutions responsible for the higher learning of over 12,000,000 students in the United States tend themselves to resist learning. Learning is change and is at least as inconvenient, threatening and occasionally painful to institutions as it is to individual human beings. One of our challenges is to make the benefits of change more attractive than its costs. The second is to avoid the compulsion to over-control. As a colleague of mine in another state said recently, "You don't have to know or control everything in order to monitor and coordinate a system."

The Council lacks authority and leverage to produce several kinds of change. I distinguish between the two because authority is grounded within the struc-

ture of power relationships that determines the course of higher education, while leverage is not.

Authority is derived from explicit statutory assignments, such as the responsibility to approve new academic programs. The greatest deficiency here is the Council's inability to close academic programs that are unnecessary or poor in quality. The requirement that institutions develop programs to assess student learning implies assessment of the programs in which the students participate. Together with other forms of assessment student assessment should be used to identify programs that should either be improved or closed. This whole system of assessment will take several years to put in place. If institutions then do not act to fix or close defective programs, the Council should seek authority to require that they do so. A decision on this should be made within the next four years.

Leverage is a more interesting and a more difficult concept. It requires an Archimedean point outside the system, a fulcrum from which great weights can be moved. The Council's highly ambiguous position—of but not in higher education, advisory to the governor and to the General Assembly, advocate and critic—is essential to leverage.

> ***"Cognition is the most socially-conditioned activity of man, and knowledge is the paramount social creation."***
>
> ***—Ludwik Fleck***

The Council has a great deal of leverage and could have more if it chose to discharge its various responsibilities in coordinated ways. For instance, the Council recently made thoughtful response by institutions to a set of program studies a condition for approval of their new academic programs. A number of other interrelationships could be developed, so that action in one area is the condition for Council support in another. Informally, this happens all the time and is little noticed. But we still are grappling with, and somewhat intimidated by, the implications of the realization that everything relates to everything else in this system of colleges and universities.

Perhaps we cannot make ours a system within which both the Council and the institutions learn. The inertia may be too great, the passive resistance to change too ingrained. The way persons think is determined by the social institutions to which they belong. The collective thought patterns of institutions may change only under some kind of drastic pressure—far greater than any to which Virginia higher education has been subject in the past ten years.

But if we are going to coordinate the system of higher education so that learning does occur in the Council and among the institutions, the Council should learn to use its leverage more effectively to produce change. It should change its procedures to allow for more frequent exchanges between institutional and Council staff. It must have resources, or access to resources, that can be used to guide and reward change of specified kinds.

I think we are closer to this end than the Council ever has been. The next several years will be an ideal period to make ours a learning system.

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Judgments about what will be often conceal opinions about what ought to be or fears about what might be. Depending upon whether the writer is a disciple of Rousseau or of Hobbes, even fragments of a prediction will have a utopian or a dystopian hue. Knowing this to be true, I debated for some time whether to include this section in my report. Finally, I tossed a coin to settle the matter. It landed on its edge, so I knocked it over.

We are, of course, in a time of change, but that is a common human experience. As the second millennium draws to a close, we shall tend to become more sensitive to the changes that occur in our individual and collective lives. We can draw comfort from the only precedent we have: the close of the first millennium found spiritual and intellectual leaders of the age intensely searching for signs that the apocalypse was imminent. Plague, political turmoil, confusion and decadence seemed to foreshadow the appearance of the anti-Christ, judgment of sinners, and the end of the world.

The parallels with the current age are tempting but I shall avoid speculation about the apocalypse in order to concentrate on two important but less dramatic issues that confront American higher education as the millennium ends. The first is the enormous influence of technology on our understanding of ourselves and the universe in which we live. The second is a conception of knowledge and our understanding of what is "real" that is at least 200 years old but whose fate is to be forgotten in every generation. The two issues are closely related, and I shall discuss them more or less together. They present intellectual and ethical challenges to higher education, which will have to subject itself to rigorous self-examination and creative reconstruction in order to remain a vital force in society. Again, at base, the subject is change.

Technology has become a dominant force in our world. Those societies that are in advanced stages of technological development prosper, while the rest wither. The economic and political order of nations is shifting to favor those who control the most sophisticated technology. It is an instrument of foreign and domestic policy whose use we are trying to master before it is too late.

> ***"Snow is falling on the age of reason, on Tom Jefferson's little hill & on the age of sensibility."***
>
> ***—Robert Hass***

As presently conceived, technology is no friend to the liberal arts and sciences. It is painting them into a corner, much as science did to religion in the 19th century. Already there are universities in which the liberal arts and sciences appear to be embellishments, social amenities for the masters of technology. They have been deprived of their capacity to shape the world. That is now technology's role.

We cannot respond to this threat by going backward, anymore than religious fundamentalism is a genuine response to the perceived threat of science. For one thing, the technological explosion occurring at the close of this century has a history of its own that dates back at least a hundred years to the beginning of corporate capitalism and the conception of persons as primarily consumers rather than producers. It did not start with the invention of the microchip.

For another thing, the simpler age we might seek in some nostalgic vision of the past is no longer useful to us in our present state of complexity. Matthew Arnold, the last great proponent of the notion that serious poetry could define the critical elements of a common culture, advanced his proposal toward the end of last century, as technology's hegemony began to pick up momentum. Even then, the common culture for which he yearned was that of an educated elite in a small island-nation. The sun was setting on him, and he knew it.

If there is a path to a cultural coherence today, it is not backward to 19th-century England, but through the great racial and ethnic diversity that now characterizes our nation. We cannot simply define what is worth knowing as that which an educated elite knows and force that upon all the people who live in this country. Neither knowledge nor culture are commodities whose essential components can be placed in a list.

Social institutions, including nation-states, seem to require some form of cultural coherence if they are to stay together voluntarily. In a nation like ours, it goes without saying that the cultural content cannot be defined by color of skin, language, or sex. We might seek coherence around commitment to certain principles such as those embodied in our constitution, but we shall have to be highly tolerant of difference. Rather than a single culture in which we all participate, we probably should expect a set of cultures that overlap in some ways but not in others. The common elements of a multi-cultural society will be constantly shifting, thus making education particularly difficult.

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mon element, if we can bridge the ugly ditch between it and the domain of meaning and value that we call the liberal arts and sciences. But if we cannot do this, technology will remain unassimilated in our midst, a source of power to those who possess it, to the disadvantage of those who do not. There is a potential here for a bifurcation in technologically advanced societies between the "haves" and "have-nots" that rivals the Marxist division between the proletarian providers of labor and the bourgeois owners of tools.

One of the great challenges facing American colleges and universities is helping to shape a new coherence out of the multiple and confused fragments that now constitute our national experience. This requires willingness to question the prevailing orthodoxies, including both their own and those of the political and economic forces that shaped American higher education at the close of last century and that sustain it now. The new coherence also must embrace different conceptions of technology and of the arts and sciences.

"Thinking" is a collective activity. The questions persons can ask, and the answers they can recognize, are determined largely by the collective patterns of thought of the social institutions to which they belong. The proposition that we impose certain categories of understanding upon what we perceive, and that those categories are determined largely by social institutions, means that the way we organize our universities has a profound effect on how we see and on the content of what we know. Traditional academic organization structure supports traditional perceptions. If we want to encourage new ways of thinking about technology and the arts and sciences, we will need to determine what kind of academic organization reflects or best supports those new conceptions.

Only when an existing pattern of thought fails to provide necessary, useful knowledge are there changes, major paradigm shifts, in the collective patterns. Such occasions usually are stressful as, for instance, was the determination that the earth revolved around the sun rather than vice versa. The primary condition for the creation of new knowledge is the need for it.

We can enumerate many shifts in collective thought patterns within scientific, political, religious and psychological institutions. The "discoveries" that the earth is round and revolves around the sun, and that energy equals mass times the speed of light squared ($e=mc^2$) are scientific examples. The revelation that there is one God is a religious example, and the declaration of intent to build a nation upon the principle that all human beings are created equal and endowed with certain inalienable rights is a political one.

Collective thought shifts like the ones I have just mentioned have correctly been called "revolutions." Each occurred because certain elements of human experience did not make sense—could not be made to make sense—within an existing thought pattern. The elements included navigational observations that were obviously wrong, apparent irregularities in the elliptical orbit of Mercury, inability to explain adequately the special destiny of a semitic people, and the incompatibility of established forms of government with the realities of a new continent. Each turned institutions upside down and changed forever what we know, how we think, and therefore what we perceive to be real.

I think we are at or approaching yet another change in collective thought patterns, and technology is at the nexus of the change. The Copernicus, Jefferson, Einstein or Freud of this paradigm shift has yet to emerge. Perhaps it is in the nature of our age that this shift will occur through the corporate and anonymous efforts of many persons. But I think it will center on a conception of technology as a vast extension of human ability to process, and therefore to create, information. The way to resolve the smoldering enmity between technology and the liberal arts and sciences is to change our conceptions of both. If I am right, we also should change the way we organize knowledge and the way we organize colleges and universities themselves.

To begin with, we must understand that technology is no longer adequately described as an extension of our capacity to manipulate an inert universe. For one thing, the universe is not inert. Matter is energy, and energy matter. Seemingly inert chemicals react with one another to produce life. The smallest,

"and Jefferson, if he isn't dead,
has gone down to K-Mart
to browse among the gadgets . . ."

—Robert Hass

irreducible material elements are not irreducible after all, and we are searching for phenomena like quarks that defy categorization in terms of "real" or "unreal." Most recently, we find that the basic structures of life are infinitesimal threads of coded genetic information called DNA.

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create information. Its enormous capacity to analyze and synthesize data actually creates new information, from which we can derive knowledge we never have had before.

We not only are able to do better and faster what we once did laboriously by hand. We now can do tasks that we have never before been able to do, and there is no apparent end to our progress. Portable computers today have 100 times as much power as computers that occupied whole buildings 40 years ago. By the turn of the century, a single microchip the size of a fingernail will have ten to 100 times more power than the portable computer has today. Unless we learn how to manage it better than we do, we shall drown in information.

The liberal arts and sciences cannot build a wall around themselves or around any dimensions of human experience they claim as their own. To do this limits them and leaves technology uncontrolled. Instead, the liberal arts and sciences should be conceived as encompassing technology, incorporating it into the information-creating, reality-constituting activity that is among the highest expressions of human being. As long as we see it as unrelated to truth, beauty and goodness technology will be an enormous threat. As long as we see it as intrinsically value-free, technology will be employed irresponsibly.

Technology is no more neutral as to values than poetry, physics, the social sciences or theater arts—for each of which the claim of amorality has at one time or another been advanced. It is another human endeavour, another world-creating human endeavour. It belongs within the liberal arts and sciences, to which nothing human can be alien. Absorbing technology and thereby transforming the liberal arts and sciences is a major intellectual challenge of our time.

One result of technological advances in this century has been the re-discovery of a concept of knowledge that does not recognize a clear distinction between "that which is known" and "the knower." It has become apparent once again that in some way the knower always affects that which is known; that is, the observer of a scientific experiment always affects its outcome. Philosophically, this concept of knowledge goes back at least to 1781, when Immanuel Kant proposed that the knowing subject imposes upon perceptions certain categories of understanding to create a structured, ordered universe that can be known.

Although neither Kant nor (I think) the theoretical physicists saw it quite this way, the inevitable influence of the knowing subject upon that which is known puts an end to the notion of dispassionate, objective truth. For the knower is a complex human being, brim full of other knowledge, emotions, opinions, prejudices and predispositions, all of which are brought to bear in the act of knowing.

Complementing the physicists and the philosophers, sociologists and anthropologists have advanced in this century the proposition that what can be known is determined not just by the knower, but by the social institutions to which she or he belongs. Memberships in a nation, church, social or political organization—even in the community of microbiologists—determines to a very great extent the questions a person is taught to ask and the answers she or he will recognize in return. In a sense, the social anthropology of knowledge becomes the starting point for every inquiry in whatever discipline.

The notion that what we know constitutes the realities within which we live may startle many readers. But it will come as no surprise to philosophers, psychologists and anthropologists who explore what a human being or human beings in community can know. Neither will it surprise poets, who always have known, and often obnoxiously have asserted, that they were creating worlds with their poems. And here the loop begins to close.

For technology is an extension of our capacity to know, to constitute the realities within which we live. We are information-creating and processing beings, as poets and physicists and in a host of other human activities. Shelley and his comrades created worlds 150 years ago; perhaps the physicists, more than the poets, do the same today.

What all of this means for colleges and universities is, of course, a far more extensive revision of the curriculum than thusfar has been imagined. Nothing can be assumed as "given" because nothing is. The content of the curriculum and the methods used to investigate that content are up for scrutiny. The organization of colleges and universities will be changed.

Today, that organization is based on the academic disciplines, each of which usually has its own department, and the professions, each of which usually has its own school. The disciplines are arbitrarily constructed and can be completely re-defined. The departmental barriers between them have taken on a reality that misrepresents the seamless cloth of human knowledge.

The departmental system is a great barrier to a coherent curriculum. It divides the academy into a set of apparently unrelated fiefdoms, each of which possesses a portion of knowledge. The result usually is a general education curriculum based upon distribution requirements that set the number of courses students must take in each of three branches of knowledge: arts and human-

ities, social sciences, and natural sciences. On top of the general education are majors in the various disciplines, each controlled by an autonomous department.

There is nothing very interesting about this curriculum. It conceives learning as the mastery of a body of knowledge, as if knowledge were simply a commodity. Changing distribution requirements is largely tinkering unless we find ways to help faculty members think beyond their own disciplines. Adding proficiency requirements is either saying we will do what we should have been doing all along, or tacking something on to the curriculum so that no department has to give anything up. This is much easier to do than it is to reconceive the whole curriculum and make new judgments about relative value. But it is far less interesting.

The departmental organization of universities and the methods of inquiry used in many disciplines reflect a psychology that divides the human psyche into various faculties: reason, feeling, emotion, imagination, and so on. Both the psychology and the theory of knowledge are archaic. The modern American college or university is organized around assumptions that were challenged convincingly late in the 18th century. Our understanding of human beings and of social institutions, as well as our understanding of knowledge itself, have changed markedly. In fact, the greatest contribution of American philosophers to the history of western thought has been in epistemology, the theory of knowledge. Yet our colleges and universities continue to organize themselves and to conduct their scholarly and pedagogical business as if this were the Augustan age.

Throughout our educations, but most explicitly in preparing for careers as teachers and scholars in higher education, we learn to hold ourselves removed from whatever is the object of our investigation. We learn to be dispassionate, as if the most rational behavior involved only the use of reason, one of those "faculties" of an archaic psychology.

But good scholarship and teaching are products of a passionate commitment to a subject of study and to students. And the knowing mind works in many ways, some of which appear far more intuitive than inductive or deductive. We have to learn not to be afraid of the notion that every dimension of a human being is involved in her or his knowing. Then we will be able to comprehend the social, cultural and personal factors that determine what and how we know. We will be able to replace the partial and fragmented conception of human being that is implicit in the current curriculum and in our methods of inquiry with a far richer, more complex and integrated conception.

Obviously, we will not change undergraduate education along the lines I am suggesting until the faculty changes. Graduate schools will have to prepare a whole new breed of faculty members with more eclectic interests and less loyalty to narrow disciplines before the undergraduate curriculum will reflect the sort of self-conscious coherence I have predicted it can achieve. They will have to be comfortable on the edges of the disciplines, and wandering in the gaps between disciplines, for that is where the most interesting problems are to be found.

We are at a point in time when many faculty members will retire in the next 20 years. If graduate education changes fairly soon, their successors can be prepared for an interesting and important task: launching a new curriculum at the start of a new millennium. If it is genuinely new, it will be a curriculum that reconceives knowledge and the nature of human being, absorbs technology into the domain of meaning and value that we call the liberal arts and sciences, and results in a structural reorganization of colleges and universities.

The most certain thing about predictions is that they will be wrong. But whether utopian or dystopian, predictions are not really so much about the future as they are about the present. They reflect perceptions of our current condition. I don't say that this is the way it is. I only say that this is the way I see it, and this is where I think we can go.

"I don't want the powers separated one wing for Governor Randolph when he comes, the other wing for love . . ."

—Robert Hass

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